

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau



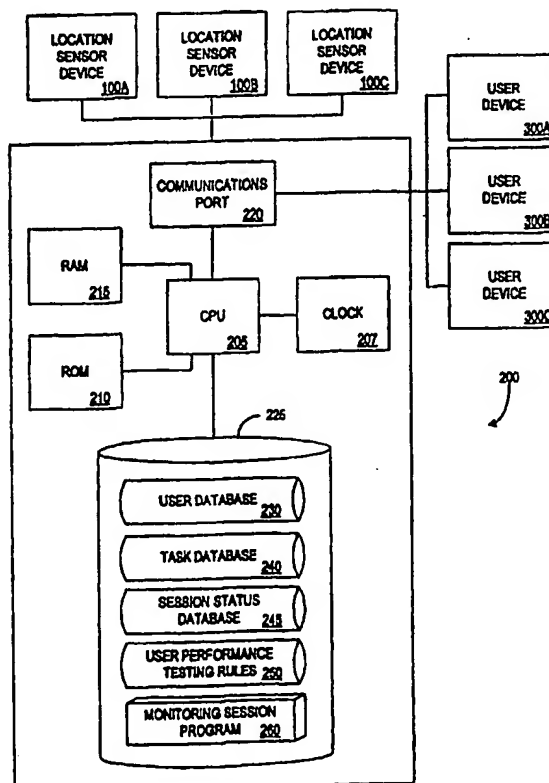
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : G06F 17/60		(11) International Publication Number: WO 00/39724
A2		(43) International Publication Date: 6 July 2000 (06.07.00)
(21) International Application Number: PCT/US99/29659 (22) International Filing Date: 14 December 1999 (14.12.99) (30) Priority Data: 09/221,250 28 December 1998 (28.12.98) US (71) Applicant (for all designated States except US): WALKER DIGITAL, LLC [US/US]; One High Ridge Park, Stamford, CT 06905 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): WALKER, Jay, S. [US/US]; 124 Spectacle Lane, Ridgefield, CT 06877 (US). TEDESCO, Daniel, E. [US/US]; Apartment 6, 192 Park Street, New Canaan, CT 06480 (US). ALDERUCCI, Dean [US/US]; 19-8 Prospect Ridge Road, Ridgefield, CT 06877 (US). MIK, Magdalena [US/US]; 10 South New Street, Greenwich, CT 06830 (US). (74) Agents: MASCHOFF, Kurt, M. et al.; Walker Digital Corporation, Intellectual Property Dept., One High Ridge Park, Stamford, CT 06905 (US).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>Without international search report and to be republished upon receipt of that report.</i>

(54) Title: INTERNET SURVEILLANCE SYSTEM AND METHOD

(57) Abstract

A system and method are disclosed for a central server to manage remote monitoring tasks performed by users of a data network. An exemplary method comprises: receiving a request from a user of a user device to monitor a remote location; determining a remote location to be monitored; enabling communication between a sensor at the remote location and the user device; and crediting value to the user in accordance with an amount of time the user device has been in communication with the remote sensor for remote monitoring purposes. An alternate exemplary method includes measuring user attentiveness while the user device is in communication with the remote sensor. Thus, the disclosed system and method provide a way for users of a data network such as the Internet to log on at any time and perform remote monitoring tasks for value. Idle time can now be turned into value using the disclosed system and method. Moreover, little or no skill is required of the user to earn value using the disclosed system and method; the user need only be attentive while performing a remote monitoring task. Location owners also benefit from the convenience by which they can now have their properties monitored and by the ability of the disclosed system and method to ensure the attentiveness of the user performing the remote monitoring task.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

INTERNET SURVEILLANCE SYSTEM AND METHOD

TECHNICAL FIELD

This invention relates generally to a commerce-based system and method, and in particular, to a system and method for a central server to manage remote
5 monitoring tasks performed by users of a data network such as the Internet.

BACKGROUND

Video surveillance has grown to play an important part in security. Video cameras have been employed in numerous locations to monitor and deter certain
10 undesirable behavior.

Video cameras are currently used to monitor locations in the absence of humans. ATMs, banks, and convenience stores are typically equipped with video cameras that constantly record video signals for later viewing. Thus, in the event of an emergency such as a robbery, the recorded signal can be reviewed at a later time to help
15 identify the perpetrators of the crime. However, these systems are primarily useful for identifying criminals after the crime has been committed. The only way these systems can prevent crime is by the deterrence that results from the presence of the camera. That is, an unscrupulous party would be more hesitant to commit a crime if they saw a video camera.

20 Video cameras have also been employed to assist humans in monitoring locations. Retail stores have used video cameras so that store managers and security guards can view customer behavior in an effort to curtail shop-lifting. Furthermore, security guards in offices and apartment buildings use video cameras to view several

locations simultaneously. For example, a security guard may view hallways, parking lots and elevators while sitting at a front desk.

While video cameras that automatically record activity for later review are not particularly useful in preventing crime, video cameras that assist humans in the monitoring process suffer their own shortcomings. For example, proprietary systems such as closed-circuit television systems can only be used by employed security guards. And because only a limited number of security guards can feasibly view the video feeds from these closed-circuit television systems, there are more errors in the detection of emergencies. In order to effectively monitor all areas of an establishment at all times, the owner would need to employ a substantial number of security guards, which would be prohibitively costly. Moreover, prior art video security systems do not enable managers and employers to test for a security guard's attentiveness. Thus, a security guard could be sleeping while supposedly "watching" the monitor.

The widespread adoption of the Internet as a tool for remote communication has also given rise to the development of video and image-based remote security systems. For example, PriVID Eye Systems Corporation is a Florida-based development firm specializing in advanced remote video monitoring technologies. Their "RemoteVision MX" is a software "video capture card" package that enables a user to view remote locations through their PC over a telephone line. Similarly, Novex Canada's "Video Catcher Plus" ("VC+") is a home security package that includes software, 4 alarms, 4 video cameras and a small device that plugs into the serial port of a home PC. The video cameras and the alarms are connected to the computer through the device. A user of the VC+ can connect to their PC from a remote

computer through a conventional modem/PSTN connection to view video feeds. The VC+ allows for viewing of up to 4 videos on one screen simultaneously. Also, the VC+ is enabled with motion detection such that recording can be automatically started only if and when a motion is detected.

5 Companies such as Cannondale have recently employed a web-based system enabling managers to view production work as described by James E. Gaskin, "Cyberspace Goes Blue-collar", *Inter@ctive Week*, August 19, 1998. As discussed in the Gaskin article, Weyer Haeuser not only uses web-based remote cameras to view the production floor, but has supplemented remote monitoring using net-cams to view dials and meters of production equipment. However, these web-based systems suffer from the same shortcomings as closed-circuit television systems. In particular, there currently is no way for a property owner to effectively monitor his premises without prohibitively escalating his costs or to test the attentiveness of those monitoring his premises.

15 SUMMARY OF INVENTION

The problems identified above are solved and a technical advance is achieved in the art by providing, in accordance with the present invention, a system and method for a central server to manage remote monitoring tasks.

20 A method for a central server to manage remote monitoring tasks according to one embodiment of the present invention includes: receiving a request from a user of a user device to monitor a remote location; determining a remote location to be monitored; enabling communication between a sensor at the remote location and the user device; and crediting value to the user for monitoring the remote

location in accordance with an amount of time the user device has been in communication with the sensor for remote monitoring purposes.

A method according to an alternate embodiment of the present invention includes: receiving a request from a user of a user device to monitor a remote location
5 in exchange for value; determining a remote location to be monitored; enabling communication between a sensor at the remote location and the user device; and measuring user attentiveness while the user device is in communication with the sensor. Many other advantageous embodiments are also disclosed.

Thus, one embodiment of the present invention is directed to a
10 commerce-based system and method that enables members of the general public who have access to a data network such as the Internet to log on at any time and perform remote monitoring tasks for value. In accordance with one aspect of the present invention, a user account is credited with value in accordance with the amount of time a user spends monitoring remote locations. Moreover, little or no skill is required of the
15 user short of his remaining attentive during a remote monitoring session. Thus, the idle time of unskilled workers, as well as the underutilized idle time of even highly skilled workers, can now be turned into value in accordance with the present invention.

An alternate embodiment measures user attentiveness. In one such embodiment, an inattentive user is penalized by automatically replacing him with
20 another user and preventing him from participating in remote monitoring tasks in the future. Thus, location owners can rest assured that their properties are being diligently monitored while they are away without having to incur excessive costs associated with hiring security guards (e.g., providing them with uniforms, benefits, etc.).

Another aspect of the present invention includes taking precautions to maintain anonymity of the locations being monitored. Anonymity is advantageous because the present invention allows individuals who are not guaranteed to be trustworthy to monitor private property over a public network (e.g., rather than requiring any pre-screening of users, one embodiment of the present invention simply relies upon user attentiveness to determine whether a user will be permitted to continue to participate in remote monitoring tasks). Without taking precautions to maintain anonymity, an unscrupulous individual knowing the location's identity could study its characteristics to plan a crime. Thus, in one embodiment of the present invention, users are not provided with the identity of the remote location being monitored and, indeed, affirmative measures are taken to prevent the user from ascertaining the identity of the location.

Further aspects of the present invention will become apparent during the course of the following description and by reference to the attached drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram illustrating one embodiment of the system of the present invention.

FIG. 2 is a block diagram illustrating one embodiment of the central server of the present invention.

FIG. 3 is a block diagram illustrating an exemplary user device.

FIG. 4 illustrates an exemplary user database.

FIG. 5 illustrates an exemplary task database.

FIG. 6 illustrates an exemplary session status database.

FIG. 7 illustrates an exemplary database of user performance testing rules.

FIGS. 8A and 8B are flow-charts illustrating an exemplary process of the monitoring session program executed by the central server of the present invention.

5 FIG. 9 is a flow chart illustrating an exemplary emergency procedure executed by the central server of the present invention.

DETAILED DESCRIPTION

Referring now to the drawings, wherein like reference numerals refer to
10 like parts, FIG. 1 illustrates one embodiment of the present invention wherein users of a data network such as the Internet can "log on" to a web site and monitor one or more remote locations in exchange for value.

As shown in FIG. 1, a central server 200 is coupled to a plurality of remote location sensor devices 100a-c and a plurality of user devices 300a-c. Central
15 server 200 may be a high bandwidth web server of the type commonly operated by Internet service providers. User devices 300a-c may be personal computers and/or televisions coupled to the Internet (e.g., WebTV). Location sensor devices 100a-c may comprise digital/analog video cameras, digital/analog audio microphones, motion detectors, pressure sensors, thermal sensors, laser and/or light sensors, radar, sonar and
20 other sensing devices well known to those skilled in the art. It is to be understood that any number of user devices and sensor devices may be coupled to the central server 200.

In one embodiment of the present invention, the central server 200 may be operated and maintained by an Internet service provider (ISP), such as America

Online™. The ISP receives payment from entities (e.g., banks, retail stores, private home owners, etc.) desiring their locations to be monitored by one or more of the ISP's users. For example, Fleet Bank may offer to pay the ISP \$6.00 per hour to have a user monitor a Fleet branch remotely over the Internet. The ISP in turn advertises this
5 opportunity to its users at the stated rate (i.e., \$6.00 per hour) less a service fee (e.g., 25% of the quoted rate of \$6.00 per hour). After a user has logged on and completed the remote monitoring task, the ISP bills Fleet Bank at the stated rate and pays or credits the user for their time at the stated rate less the service fee.

To monitor remote locations for value, users initially register with the
10 central server 200 and receive a user identifier. After registering, users can simply present their user identifier to central server 200 when logging on for assignment of a remote monitoring task. Remote monitoring tasks include a task identifier and a shift (e.g., a date and/or a time period). Central server 200 assigns the remote monitoring task taking into account predetermined rules specified by the location owner, such as a
15 predetermined number of users required to monitor the remote location simultaneously and/or a minimum user rating. In accordance with one aspect of the present invention, users are rated based on their attentiveness during monitoring sessions, as will be discussed in detail hereinafter in connection with FIG. 8.

In addition, a number of precautions are preferably taken by central
20 server 200 to maintain anonymity of the location being monitored. Anonymity is typically advantageous since the present invention allows individuals who are not guaranteed to be trustworthy to monitor private property over a public network. These precautions are discussed in detail hereinafter in connection with FIG. 8 and include

preventing the user from monitoring a location that is within a predetermined distance of the user's home address. At a minimum, the identity of the physical location assigned for monitoring is not revealed to the user. In the prior art remote video surveillance systems discussed above, anonymity was not important, or even practical,
5 because those systems were designed for private usage.

At the start of the shift, central server 200, enables communication between the location sensor devices 100a-c and the user devices 300a-c. As previously indicated, a location may be monitored by a plurality of users simultaneously. During the shift, central server 200 takes steps to measure, encourage and/or enforce user
10 attentiveness, as will be discussed in detail hereinafter in connection with FIG. 8. One method of measuring user attentiveness includes transmitting test communications to the user device and receiving responses to the test communications within a predetermined period of time. If a predetermined number of responses to test communications are not received within the time specified, the user's rating is lowered
15 and communication between the location sensor device(s) and the user device may consequently be disabled. In addition to lowering the user's rating, the user can be further penalized as discussed in detail hereinafter in connection with FIG. 8, including preventing future monitoring by the user. However, if communication between the user device and the remote sensor device(s) has not been disabled due to inattentiveness, at
20 the end of the shift, central server 200 credits value to the user's account for performing the monitoring task as will be discussed in detail hereinafter.

At the time a user is assigned the remote monitoring task, he is also provided with emergency procedures to be followed in the event that the user detects an

emergency at the remote location during his shift. If a signal is received by the user device from the central server 200 and the user interprets that signal to indicate an emergency at the remote location, central server 200 will determine whether the reported emergency is legitimate in the manner discussed in detail hereinafter in connection with FIG. 8. If legitimate, central server 200 will transmit an output request to an emergency dispatch service corresponding to the sensor location. Alternatively, the emergency procedure provided to the user includes the phone number of the emergency dispatch service (i.e., a service geographically corresponding to the remote location) and thus, upon detection of an emergency, the user can contact the emergency dispatch service himself.

FIG. 2 depicts a block diagram of an exemplary central server 200 maintained and operated, e.g., by an Internet service provider. The central server 200 performs all the operations of a conventional server maintained and operated by an Internet service provider and performs additional operations in accordance with the present invention. The central server 200 includes a CPU 205 coupled to a ROM 210, RAM 215 and system clock 207. The CPU 205 is also coupled to the location sensor devices 100a-c and the user devices 300a-c via a communications port 220. As shown in FIG. 2, the CPU 205 is also coupled to a data storage device 225. Of course, CPU 205 may comprise a plurality of processors working in conjunction.

Data storage device 225 includes a variety of databases including a user database 230, a task database 240, a session status database 245, and a user performance testing rules database 250. The user database 230 of data storage device 225 contains user information. The task database 240 contains information concerning

remote monitoring tasks. The session status database 245 contains information concerning the status of remote monitoring tasks. The user performance testing rules database 250 contains testing rules for remote monitoring tasks. Each of these databases will be discussed in detail hereinafter in conjunction with FIGS. 4-7. Storage
5 device 225 further includes a monitoring session program 260 executed by CPU 205 to manage remote monitoring tasks in accordance with the present invention. The monitoring session program 260 will be discussed in detail hereinafter in connection with FIGS. 8 and 9.

FIG. 3 is a block diagram illustrating an exemplary user device 300. In
10 one embodiment, the user device can be a personal computer, which includes a CPU 305 coupled to ROM 310, RAM 315 and system clock 320. The CPU 305 is coupled to a variety of input devices 325 and output devices 330. The input devices 325 may include one or more of the following: a mouse, a keyboard, a monitor with "touch screen" capability, and a microphone. The output devices 330 may include, for
15 example, a monitor and/or a speaker. The device 300 also includes a communications port 335 for accessing a data network 340 such as the Internet.

FIG. 4 illustrates an exemplary user database 230, which records information concerning users who have registered to log on to the central server of the present invention to monitor remote locations in exchange for value. As previously
20 indicated, when a user first requests to monitor a remote location, a record for the user is established in the user database 230. For each record, the user database 230 includes a user identifier field 410, a user rating field 420, and an account balance field 430.

The user identifier field 410 of user database 230 contains a user identifier such as a password, a PIN number, a credit card number, or a telephone number provided by the user, or some other identifier assigned to the user by the central server 200. The user rating field 420 contains a user rating generated by central server 200 based on the user's past performance during remote monitoring sessions. Lastly, account balance field 430 is a running account (e.g., a financial account) of the value credited to the user in exchange for performing remote monitoring tasks.

FIG. 5 illustrates an exemplary task database 240 which preferably stores specific information for each remote monitoring task. When a location owner instructs the operator of server 200 (e.g., an ISP) to have its location monitored remotely by one of the ISP's users, a record for the remote monitoring task is established in the task database 240 in accordance with information provided to the ISP by the location owner. For each record, the task database includes a task identifier in field 505 (assigned by the ISP), the geographic location of the remote sensor in field 510 (e.g., Fleet Bank, Hamden, CT Branch), the electronic address of the remote sensor in field 515 (e.g., www.fleetbank.com/branch3/cam1), and the owner of the location in field 520 (e.g. Fleet Corporation, Hartford, CT). Each record also includes the pay rate associated with monitoring the location in field 525, any rules that must be satisfied prior to monitoring the location in field 530 (e.g., more than 3 users), the shift(s) during which the location is to be remotely monitored in field 535 and the emergency procedures to be followed in the event that the user detects an emergency condition at the remote location in field 540 (e.g., click the emergency button on the ISP frame).

Lastly, each record also contains an indication in field 545 of the availability of the remote monitoring task (i.e., whether or not user(s) are still needed to perform the task).

FIG. 6 illustrates an exemplary session status database 245, which maintains status information for each shift of a remote monitoring task. For each task and shift identified by the task identifier in field 605 and shift in field 610, the session status database 245 includes the user identifier(s) in field 615 (as indicated above, more than one user may monitor the same location), the status of the shift in field 620, and the performance results of the user(s) in responding to test communications in field 625. As shown in FIG. 6, if the shift of the remote monitoring task has not yet commenced, the entries in fields 620 ("Status") and 625 ("Performance Results") will contain the indication "Not Available" ("N/A").

FIG. 7 illustrates an exemplary user performance testing rules database 250. The user performance testing rules database 250 includes a plurality of records each associated with the user testing rules for a particular task. Each record includes fields for a task identifier in field 705, a test communication in field 710, test communication intervals in field 715, the required response time in field 720, and the required response in field 725.

The test communication field 710 in database 250 contains the test communication to be transmitted to the user during the remote monitoring task (e.g., staged emergencies, questions, etc.). Field 715 contains the frequency at which the test communication is to be transmitted to the user (e.g., random, periodic, etc.). Field 720 contains the time in which the user is required to respond to the test communication

(e.g., 10 seconds). Lastly, field 725 contains the required user response to the test communication (e.g., click 911 button).

FIGS. 8A and 8B are flow-charts illustrating an exemplary process of the monitoring session program 260 executed by central server 200. Users preferably “register” with the operator of the central server 200 to perform remote monitoring tasks. Registration may take place on-line, by phone, by mail, or in-person. At the time of registration, central server 200 assigns the user a user identifier (if one is not supplied by the user) and then creates a record for the user in user database 230 (if one has not already been created). As shown in FIG. 4, the record will contain the user identifier in field 410. However, the user rating in field 420 will contain a “Not Available” entry or the like and the account balance in field 430 will be “\$0.00” if the user has not yet performed a remote monitoring task. If registration occurs on-line, the user may either remain on-line for assignment of a remote monitoring task, or log off and then log back on at a later time to request an assignment.

Turning to FIG. 8A, in step 800, central server 200 receives a request from a user of the data network to monitor a remote location. The request may include the user identifier previously assigned to the user. In step 805, the central server 200 accesses task database 240 and identifies a remote monitoring task for assignment to the user. This includes determining an appropriate task identifier (e.g., “12345”) and shift (e.g., 1/1/98 and/or 12:00AM – 3:00 AM). In an alternate embodiment, the user is not assigned a shift. Rather, the user can log on for assignment of a remote monitoring task at any time and end the remote monitoring session (i.e., log off) at any time. As a precondition to logging off without negatively impacting the user’s rating, sever 200

may require that an alternate user be available to continue monitoring the remote location. (As discussed in detail below, the present invention can notify a back-up user to replace an original user.)

The process of identifying a remote monitoring task may take into
5 account the predetermined rules in field 530 of task database 240 specified by the location owner (e.g., a minimum user rating required for a user to be assigned a particular location). The process may also take into account user-specified preferences concerning the assigned shift. In addition, the process preferably includes taking precautions to maintain anonymity of the location being monitored. Without such
10 precautions, an unscrupulous user knowing the location's identity could study the location's characteristics, such as its traffic patterns, to plan a crime. For example, central server 200 may prevent the user from monitoring a location that is within a predetermined distance from the user's physical location (as determined by reference to zip codes or modern navigation methods such as GPS). Alternatively, central server
15 200 may prevent the user from monitoring the location more than a predetermined total number of times, or from monitoring the location during a predetermined time of day if the user has previously monitored the location a predetermined number of times during that time of day. In yet another embodiment, central server 200 may randomly change the user's assigned location during the user's shift. In summary, it is desirable that
20 central server 200 not provide the user with the identity of the remote location to be monitored and take affirmative steps to prevent the user from ascertaining the identity of the location.

Once a task identifier and shift has been assigned to the user, central server 200 communicates them to the user together with the emergency procedure specified in field 540 of task database 240 for reporting emergencies at the remote location. In step 810, the central server 200 establishes a record for the user in session status database 245. Rather than creating a new record for the user, the user identifier
5 may be added to a previously established record. For example, a location may be monitored by a plurality of users and at least one user of the plurality of users may have already been assigned the location and thus a corresponding record may have already been established in session status database 245. The record in session status database
10 245 includes the task identifier in field 605, the shift in field 610 and the user identifier in field 615. The status in field 620 and the performance results in field 625 may contain a "Not Available" entry or the like, until commencement of the remote monitoring session.

It is to be understood that often it may be impractical for the user to
15 remain in communication with central server 200 until the start time of the shift (e.g., the user may be logged on in the early morning and the assigned shift does not begin until mid-afternoon). In such instances, the user may log off after receiving the task identifier and shift, and then log on to central server 200 at a time closer to the start of the shift. When logging back on, the user preferably provides the user identifier, task
20 identifier and shift to assist central server 200 in identifying which remote monitoring task in session status database 245 the user is logging on to perform (e.g., the user may be assigned more than one remote monitoring task). Central server 200 may also

transmit a reminder to the user via e-mail or telephonically (i.e., a voice call) prior to the start of the shift.

At a predetermined period of time prior to the start of the shift, central server 200 in step 815 determines whether the rules in field 530 of task database 240 corresponding to the task identifier and shift assigned to the user have been satisfied. For example, the rules may require a minimum number of users (and/or users of a particular rating) for the remote monitoring task to commence. Moreover, the number of assigned users and/or the user ratings of those users may have changed since the user was initially assigned the task identifier and shift requiring a re-evaluation in light of the rules in field 530 of database 240. If the rules in field 530 have been satisfied then in step 820 central server 200 uses the sensor address in field 515 of task database 240 to enable communication between the location sensor device(s) and the user device at the start of the shift. Central server 200 also updates the status in field 620 of the appropriate record in session status database 245 from "Not Available" to "In Progress". It is to be understood that the communication between the location sensor devices and the user devices can be video-based and/or audio-based. If only audio-based, a "speakerphone" setting on the user device is used to monitor sounds at the remote location.

As previously described, a location may be monitored in accordance with the present invention by a plurality of users simultaneously. In such instances, the present invention can deter "bystander inaction syndrome". Bystander inaction syndrome is a sociological behavioral pattern that emerges when several people simultaneously witness an emergency, but each person assumes that someone else will

notify the authorities. The present invention prevents this behavioral pattern in several ways. In one embodiment, central server 200 simply does not inform the user that anyone else is monitoring the location. In another embodiment, central server 200 informs the user that he is the *only* user monitoring the remote location. In either case, 5 the user is instilled with the belief that if he does not report the emergency, it will not be reported at all. In an alternate embodiment, central server 200 informs the user whenever an emergency is reported by another user at the location the user is monitoring. In this manner, when an emergency occurs, the user knows whether anyone else has reported it yet and can act accordingly. In some of the embodiments 10 discussed hereinafter, central server 200 imposes penalties for false positives or inattentiveness and/or pays bonuses for the detection of legitimate emergencies. Thus, in those embodiments, users are economically motivated to report legitimate emergencies.

Continuing with FIG. 8A, central server 200 in step 825 uses the task 15 identifier to access the corresponding record in the user performance testing rules database 250. At the test communication intervals specified in field 715, central server 200 transmits the test communication specified in field 710 of the record to the user device to measure user attentiveness. In a first embodiment, the test communication comprises a randomly transmitted predetermined video of a fabricated emergency. In a 20 second embodiment, the test communication comprises one or more questions communicated to the user, for example, by e-mail.

In an alternate embodiment, central server 200 monitors a biometric reading from the user at the remote device to measure user attentiveness. For example,

the user device may be equipped with a retinal scanner similar to those being developed for ATM machines. The retinal scanner would then take random, periodic or continuous readings to determine whether the user is watching the video stream from the remote location on his screen. In yet another alternate embodiment, the user device
5 is equipped with a video camera. Other users can then log on to central server 200 and be assigned the remote monitoring task of monitoring another user monitoring a remote location. Once inattention is detected, central server 200 may also *enforce* attention by causing an audible alarm to be transmitted to the user. The alarm may grow progressively louder until the user responds to the alarm.

10 Whereas the foregoing embodiments function to detect and deter inattention, other embodiments function to *encourage* attentiveness. In one embodiment, for example, central server 200 randomly transmits to the user an offer to enter the user in a sweepstakes. In another embodiment, entertainment video is transmitted to the user at random times and/or for random durations. Since the user
15 cannot predict when the next transmission of entertainment video will occur, he will be encouraged to remain attentive to await the next transmission.

In step 830 of FIG. 8A, central server 200 determines whether a response to the test communication was received within the response time specified in field 720. If a predetermined number of responses (which may be recorded in RAM
20 215 for the duration of the shift) are not received within the time specified in field 720, then in step 835 central server 200 penalizes the user by adjusting the user's rating in user database 230 in accordance with predetermined criteria, and thereafter disables communications between the location sensor device(s) and the user device. In addition

to adjusting the user's rating, central server 200 may penalize the user by not paying him for the remote monitoring session, paying him less than the pay rate specified in field 525 of task database 240, imposing a charge upon the user (i.e., deducting a predetermined amount from the account balance in field 430 of user database 230), and, 5 in an extreme case, preventing the user from participating in remote monitoring tasks in the future. In one embodiment, if central server 200 determines that the user is inattentive, a back-up user can be notified to replace the original user. The back-up user can then log-on and monitor the location for the remainder of the original user's shift. Such an embodiment is particularly well suited to situations in which the operator of 10 central server 200 is an ISP, since the ISP can actively monitor all current users that utilize the ISP for Internet related services. Thus, the ISP can recruit users to perform remote monitoring tasks for value (e.g., by transmitting offers to registered users of the ISP).

If a response was received within the specified time, central server 200, 15 in step 840 of FIG. 8B, evaluates the response to determine whether it was the response specified in field 725 of the user performance testing rules database 250 (e.g., click 911). If the test communication transmitted to the user comprises a question, the evaluation in step 840 includes determining whether the user responded with the expected answer. In step 845, central server 200 updates the user's rating in database 20 230 in accordance with predetermined criteria and, if the user's shift is not over (step 850), the process returns to step 825. As discussed above, the ratings can be used when determining whether to assign a user a particular remote monitoring task and it is envisioned that users with higher ratings will be assigned higher paying tasks (e.g., a

bank may be willing to pay more than a homeowner to have a location remotely monitored). At the end of the shift, in step 850, the central server 200 uses the task identifier to access the corresponding record in the session status database 245 and update the entry in field 625 ("Performance Results") to reflect the user's performance
5 in responding to test communications. Alternatively, the user's performance may be continuously or periodically updated during the shift.

Finally, in step 855, central server 200 credits the user's account balance in field 430 of user database 230 in accordance with the pay rate and shift duration specified in fields 525 and 535 respectively of task database 240. Various payment
10 schemes are contemplated. For example, the pay rate may incorporate such criteria as the time of day (e.g., a user may be paid more to monitor a location between the early morning hours of 2:00AM and 5:00AM), whether the user is monitoring two or more locations simultaneously (e.g., a user may be paid more to monitor two or more locations at the same time), the criminal history of the community in which the sensor
15 is located (e.g., a user may be paid more to monitor locations whose zip codes correspond to communities having statistically higher crime rates or, alternatively, more users may be assigned to higher crime areas), and/or the number of users simultaneously monitoring the remote location (e.g., the user may be paid less if more than one user is monitoring the same location). If the operator of central server 200 is
20 an ISP, the user may be provided with discounted or free Internet access if the user monitors the location for a predetermined amount of time during the billing cycle. The ISP may also submit sweepstakes entries or other positive rewards on the user's behalf for each predetermined period of time spent monitoring a location (e.g., one entry for

each x minutes spent monitoring). Those skilled in the art will appreciate that many types of services may be granted to the user in exchange for performing remote monitoring tasks. In addition, bonuses may be paid for each legitimate emergency detected by the user.

5 In an alternate embodiment, the user operates a different program (e.g., a word processor) in a different window on the user device 300a-c while maintaining communication with the sensor device(s) 100a-c via central server 200 using a web browser. In this embodiment, the sensor device includes a video camera and a motion detector. Rather than, or in addition to, detecting motion at the remote location, the
10 sensor device may be equipped to detect other events such as a predetermined level of light intensity (e.g., a bright light illuminating a dark area) or static (e.g., resulting from the sensor having been disabled). In response to a signal from the central server indicative of a predetermined event having been detected by a sensor device, the user device preempts the program being operated by the user to immediately display the
15 video data received from the video camera. The user can then review the displayed video data to determine whether an emergency has occurred at the remote location. Thus, in accordance with one aspect of the present invention, a user can receive value for passively monitoring a remote location while working on an entirely different project.

20 In yet an alternate embodiment, rather than enabling communication between sensor devices 100a-c and user devices 300a-c via the Internet, central server 200 causes the video/audio data stream received from sensor devices 100a-c to be transmitted to user devices 300a-c via a dedicated television channel of a wireless or

cable television system. The user can then monitor the video/audio data on the user device, which, in this embodiment, is preferably a television set. In addition, if the user device includes a picture-in-picture feature, the user can employ this feature to monitor the video data while watching a program on another television station. In these

5 embodiments, a user can submit a request to monitor a remote location via an interactive television set or, via his telephone by calling the operator of central server 200, if his television does not include an interactive feature. In an alternate embodiment, in addition to a video camera, the sensor device(s) 100a-c include detectors for detecting predetermined events (e.g., a predetermined level of motion,

10 sound, light intensity, etc.) at the remote location. When a predetermined event is detected by the sensor device, a signal indicative of the predetermined event is transmitted from the central server to functionality in the television set via the wireless or cable television system. In response to the received signal, the functionality in the television set preempts the television program currently being watched by the user to

15 display the video/audio data received from the video camera (e.g., the television will change channels to the dedicated television channel). Alternatively, the functionality in the television set may simply display a visual alert to the user to manually change channels to the dedicated television channel. [WE NEED SOME CLAIMS DIRECTED TO THIS MANUAL EMBODIMENT] In these embodiments, functionality in the

20 television set may also cause an audible alarm to be issued to inform the user that a predetermined event has been detected at the remote sensor. Thus, the user may engage in other activities, such as household chores, while monitoring a remote location in exchange for value.

FIG. 9 is a flow chart illustrating an exemplary emergency procedure executed by the central server 200 of the present invention. In step 900, central server 200 receives a signal from the user device indicating an emergency at the remote location corresponding to the sensor address of the current monitoring session. In step 5 905, central server 200 determines whether the reported emergency is in response to a test communication and, if not, whether the reported emergency is legitimate. In one embodiment, if the reported emergency is not in response to a test communication, central server 200 will immediately communicate the video feed of the remote location to other users who will verify that an emergency has occurred. In a second 10 embodiment, central server 200 will contact an emergency dispatch service only if a threshold number or percentage of users have reported the emergency. If the emergency is not legitimate, central server 200, in step 910, lowers the user's rating in user database 230 in accordance with predetermined criteria. If, however, the reported emergency is legitimate, central server 200, in step 915, transmits an output request to 15 an emergency dispatch service corresponding to the sensor location in field 510 of task database 240. Alternatively, central server 200 communicates to the user the phone number of the emergency dispatch service corresponding to the geographic location of the sensor. Upon detecting an emergency, the user contacts the emergency dispatch service himself.

20 The many features and advantages of the present invention are apparent from the detailed specification, and thus, it is intended by the appended claims to cover all such features and advantages of the invention which fall within the true spirit and scope of the present invention.

Furthermore, since numerous modifications and variations will readily occur to those skilled in the art, it is not desired that the present invention be limited to the exact construction and operation illustrated and described herein, and accordingly, all suitable modifications and equivalents which may be resorted to are intended to fall

5 within the scope of the claims.

CLAIMS

We claim:

- 5 1. A method for a central server to manage remote monitoring tasks,
 comprising:
 receiving a request from a user of a user device to monitor a remote
 location;
 determining a remote location to be monitored;
10 enabling communication between a sensor at the remote location and the
 user device; and
 crediting value to the user in accordance with an amount of time the user
 device has been in communication with the sensor for remote monitoring purposes.
2. The method of claim 1 wherein the user device is at least one of a
15 personal computer and a television set.
3. The method of claim 1 wherein the request includes an account
 identifier.

4. The method of claim 1 wherein the request includes a task identifier.
5. The method of claim 1 further comprising the step of:
determining a shift for monitoring the remote location; and wherein the
step of enabling communication between the sensor and the user device occurs at
5 approximately a start of the shift.
6. The method of claim 5 wherein the shift includes a date and a time.
7. The method of claim 1 wherein an identity of the remote location is not
communicated to the user.
8. The method of claim 1 further comprising the step of registering the user
10 to monitor remote locations.
9. The method of claim 1 wherein communication between the sensor and
the user device involves the Internet.

10. The method of claim 1 wherein communication between the sensor and the user device includes at least one of video communication and audio communication.
11. The method of claim 1 wherein the step of crediting value includes
5 crediting a financial account.
12. The method of claim 1 further comprising the step of:
determining whether predetermined criteria have been satisfied prior to enabling communication between the sensor and the user device.
13. The method of claim 12 wherein the predetermined criteria includes a
10 minimum number of users to monitor the remote location.
14. The method of claim 12 wherein the predetermined criteria includes a user rating.

15. The method of claim 5 further comprising the steps of:
disabling communication between the sensor at the remote location and
the user; and
enabling communication between a sensor at a second remote location
5 and the user,
wherein the steps of disabling and enabling occur during the shift.
16. The method of claim 1 further comprising the steps of:
transmitting a test communication to the user at the user device; and
determining whether a response to the test communication is received
10 within a predetermined period of time.
17. The method of claim 16 further comprising the step of:
updating a user rating based on the response.
18. The method of claim 1 further comprising the steps of:
outputting an offer to the user at the user device to enter the user in a
15 sweepstakes; and
receiving a response to the offer.

19. The method of claim 18 further comprising the step of:
entering the user in the sweepstakes.
20. The method of claim 1 further comprising the steps of:
transmitting entertainment video to the user at the user device.
- 5 21. The method of claim 20 wherein entertainment video is transmitted to
the user at random times.
22. The method of claim 20 wherein entertainment video is transmitted to
the user for random durations.
23. The method of claim 1 further comprising the steps of:
10 receiving from the user device notification of an emergency at the
remote location; and
contacting a third party in response to the received notification.
24. The method of claim 23 wherein the third party is contacted by
telephone.

25. The method of claim 1 further comprising the steps of:
determining a pay rate; and
crediting value to the user in accordance with the pay rate.
26. The method of claim 1, further comprising the step of:
5 receiving from the user device notification of an emergency at the
remote location, and wherein the step of crediting value to the user includes paying a
bonus for each legitimate emergency detected by the user.
27. A method for a central server to manage remote monitoring tasks,
comprising:
10 assigning to a user of a data network a remote monitoring task including
a remote location to monitor and a shift for monitoring the remote location; and
providing the user with information relating to the remote monitoring
task, the information to be transmitted by the user to the central server at approximately
a start of the shift.
- 15 28. The method of claim 27 wherein the information comprises at least one
of an account identifier, a task identifier and the shift.
29. The method of claim 27 wherein the data network is the Internet.

30. The method of claim 27 wherein the data network is a cable television network.
31. The method of claim 27 further comprising the step of:
determining whether predetermined criteria have been satisfied prior to
5 providing the user with the information to be transmitted to the central server.
32. The method of claim 31 wherein the predetermined criteria includes a user rating.
33. The method of claim 27 further comprising the step of:
preventing the user from monitoring a remote location that is within a
10 predetermined distance from the user's address.
34. The method of claim 27 further comprising the step of:
preventing the user from monitoring a remote location more than a
predetermined number of times.

35. The method of claim 27 further comprising the step of:
preventing the user from monitoring a remote location during a
predetermined period of time.
36. The method of claim 27 wherein the step of assigning a remote
5 monitoring task is based on user-specified preferences concerning the shift.
37. The method of claim 27 further comprising the steps of:
determining an emergency procedure to be followed by the user in the
event the user detects an emergency at the remote location; and
transmitting the emergency procedure to the user.
- 10 38. The method of claim 37 wherein the emergency procedure includes a
procedure for contacting a third party.
39. The method of claim 38 wherein the third party is contacted by
telephone.

40. The method of claim 27 further comprising the step of:
reminding the user of the remote monitoring task prior to a start of the
shift.

41. A method for a central server to manage remote monitoring tasks,
5 comprising:
determining a remote location to be monitored;
enabling communication between a sensor at the remote location and a
plurality of users of a data network;
determining an amount of time each user of the plurality of users has
10 monitored the remote location; and
crediting value to each user of the plurality of users for monitoring the
remote location in accordance with the amount of time that each user has monitored the
remote location.

42. The method of claim 41 further comprising the steps of:
15 determining a shift for monitoring the remote location; and wherein the
step of enabling communication between the sensor and the plurality of users occurs at
approximately a start of the shift.

43. The method of claim 41 further comprising the step of:
recruiting users to monitor the remote location.
44. The method of claim 41 further comprising the step of:
informing a user of the plurality of users that he is the only user
5 monitoring the remote location.
45. The method of claim 41 further comprising the steps of:
receiving notification of an emergency at the remote location from a first
user of the plurality of users; and
contacting a third party if at least a predetermined amount of the
10 plurality of users reports the emergency.
46. The method of claim 45 further comprising the step of:
informing a second user of the plurality of users of the notification of the
emergency at the remote location.
47. A method for a central server to manage remote monitoring tasks,
15 comprising:
receiving a request from a user of a user device to monitor a remote
location in exchange for value;

determining a remote location to be monitored;
enabling communication between a sensor at the remote location and the
user device; and
measuring user attentiveness while the user device is in communication
5 with the sensor.

48. The method of claim 47 wherein the user device is a personal computer.

49. The method of claim 47 further comprising the step of:
determining a shift for monitoring the remote location; and wherein the
step of enabling communication between the sensor and the user device occurs at
10 approximately a start of the shift.

50. The method of claim 47 further comprising the step of:
determining whether predetermined criteria have been satisfied prior to
enabling communication between the sensor and the user device.

51. The method of claim 50, wherein the predetermined criteria includes a
15 minimum user rating required to monitor the remote location.

52. The method of claim 51, wherein the minimum user rating is based on measured user attentiveness.

53. The method of claim 47 further comprising the step of crediting value to a financial account of the user for monitoring the remote location.

5 54. The method of claim 47 wherein the step of measuring user attentiveness includes:

transmitting a test communication to the user at the user device; and
determining whether a response to the test communication has been received within a predetermined period of time.

10 55. The method of claim 54 wherein the test communication is a predetermined video of an emergency.

56. The method of claim 54 wherein the test communication is a query.

57. The method of claim 54 further comprising the step of:
determining whether the response is an expected response.

58. The method of claim 47 wherein the step of measuring user attentiveness includes:

receiving a biometric measurement of the user.

59. The method of claim 58 wherein the biometric measurement is a retinal
5 scan.

60. The method of claim 47 wherein the step of measuring user attentiveness includes the step of:

enabling a second user to monitor the user monitoring the remote location.

10 61. The method of claim 47 further comprising the step of causing an audible alarm to be transmitted to the user at the user device if the user is not attentive.

62. The method of claim 47 further comprising the step of:
penalizing the user if the user is not attentive.

63. The method of claim 62 wherein the step of penalizing the user includes paying the user only if the user is attentive.

64. The method of claim 62 wherein the step of penalizing the user includes crediting an account of the user an amount that is less than if the user had been
5 attentive.

65. The method of claim 62 wherein the step of penalizing the user includes charging an account of the user.

66. The method of claim 62 wherein the step of penalizing the user includes preventing future monitoring by the user.

10 67. The method of claim 47 further comprising the steps of:
determining whether the user is attentive; and
if the user is not attentive, replacing the user with an alternate user to
monitor the remote location.

68. A method for alerting a user of a computer of an emergency at a remotely monitored location, comprising:

maintaining the computer in communication with a sensor at the remotely monitored location;

5 transmitting a signal indicative of a predetermined event detected by the sensor to the computer; and

transmitting video data from a camera at the remotely monitored location to the computer,

10 wherein the signal causes the computer to preempt a program unrelated to remote monitoring to display the video data.

69. The method of claim 68 wherein the step of maintaining the computer in communication with the remote sensor is performed via a browser.

70. The method of claim 68 wherein the program is a word processor.

71. The method of claim 68 wherein the predetermined event includes at
15 least one of a predetermined level of motion, sound, pressure and light intensity.

72. A method for alerting an individual of an emergency at a remote location, comprising:

transmitting a signal indicative of a predetermined event detected by a sensor at the remote location to a television set; and

5 transmitting video data from a camera at the remote location to the television set,

wherein the signal causes the television set to preempt a television program to display the video data.

73. The method of claim 72 wherein the predetermined event includes at
10 least one of a predetermined level of motion, sound, pressure and light intensity.

74. The method of claim 73 further comprising the step of transmitting a signal to the television set to sound an alarm to inform the user of the predetermined event detected at the sensor.

75. A method for a user of a data network to monitor remote locations in
15 exchange for value:

receiving a data stream generated by a sensor at a remote location;

monitoring the data stream for an amount of time; and

receiving credit to a user account for monitoring the data stream for that amount of time.

76. The method of claim 75 further comprising the step of transmitting an account identifier to the central server.

5 77. The method of claim 75 further comprising the step of providing a task identifier to the central server.

78. The method of claim 75 wherein the data network is the Internet.

79. The method of claim 75 wherein the data stream comprises at least one of a video data stream and an audio data stream.

10 80. The method of claim 75 wherein the credit is monetary.

81. The method of claim 75 wherein the data stream comprises a plurality of data streams.

82. The method of claim 81 wherein the step of monitoring comprises monitoring the plurality of data streams substantially simultaneously.

83. The method of claim 75 wherein the step of monitoring the data stream includes the step of monitoring for an emergency at the remote location.

5 84. The method of claim 83 further comprising the step of notifying the central server in the event an emergency is detected.

85. The method of claim 75 further comprising the steps of:
receiving a predetermined video of an emergency; and
responding to the predetermined video of an emergency within a
10 predetermined period of time.

86. The method of claim 75 further comprising the steps of:
receiving queries; and
responding to the queries within a predetermined period of time.

87. A method for alerting a user of a computer of an emergency at a remotely monitored location, comprising:

maintaining communication with a remote sensor via a central server;

running a program on the computer, wherein the program is unrelated to

5 remote monitoring; and

pre-empting the program if a predetermined event is detected by the remote sensor.

88. The method of claim 87 wherein the step of maintaining communication with a remote sensor is performed via a browser.

10 89. The method of claim 87 wherein said predetermined event includes a predetermined level of motion or sound.

90. The method of claim 87 further comprising the step of:
receiving video data from a camera at the remotely monitored location,

and

15 wherein the step of preempting includes displaying the video data.

91. A method for a television set to alert an individual of an emergency at a remote location, comprising:

receiving a signal indicative of a predetermined event detected by a sensor at the remote location; and

5 in response to the signal, preempting a television program to display video data received from a camera at the remote location.

92. The method of claim 91 wherein the predetermined event includes at least one of a predetermined level of motion, sound, pressure and light intensity.

93. The method of claim 92 further comprising the step of sounding an
10 alarm to inform the user of the predetermined event having been detected by the remote sensor.

94. A system for managing remote monitoring tasks comprising:
a memory device;
a processor in communication with the memory device; and
the processor configured to:
5 receive a request from a user of a user device to monitor a remote location;
determine a remote location to be monitored;
enable communication between a sensor at the remote location and the user device; and
10 credit value to the user in accordance with an amount of time the user device has been in communication with the sensor.
95. The system of claim 94 wherein the user devices is a personal computer.
96. The system of claim 94 wherein the request includes an account identifier.
- 15 97. The system of claim 94 wherein the request includes a task identifier.

98. The system of claim 94 wherein the processor is further configured to determine a shift for monitoring the remote location and wherein the processor enables communication between the sensor and the user device at approximately a start of the shift.

5 99. The system of claim 94 wherein the processor is further configured to register the user to monitor remote locations.

100. The system of claim 94 wherein communication between the sensor and the user device involves the Internet.

101. The system of claim 94 wherein communication between the sensor and
10 the user device includes at least one of video communication and audio communication.

102. The system of claim 94 wherein processor is further configured to determine whether predetermined criteria have been satisfied prior to enabling communication between the sensor and the user device.

103. The system of claim 102 wherein the predetermined criteria includes a minimum number of users to monitor the remote location.

104. The system of claim 102 wherein the predetermined criteria includes a minimum user rating.

5 105. The system of claim 98 wherein the processor is further configured to disable communication between the sensor at the remote location and the user; and enable communication between a sensor at a second remote location and the user during the shift.

10 106. The system of claim 94 wherein the processor is further configured to transmit a test communication to the user at the user device; and determine whether a response to the test communication is received within a predetermined period of time.

107. The system of claim 106 wherein the processor is further configured to update a user rating based on the response.

108. The system of claim 94 wherein the processor is further configured to output an offer to the user at the user device to enter the user in a sweepstakes; and receive a response to the offer.

109. The method of claim 108 further comprising the step of:
5 entering the user in the sweepstakes.

110. The system of claim 94 wherein the processor is further configured to transmit entertainment video to the user at the user device.

111. The method of claim 110 wherein entertainment video is transmitted to the user at random times.

10 112. The method of claim 110 wherein entertainment video is transmitted to the user for random durations.

113. The system of claim 94 wherein the processor is further configured to receive from the user device notification of an emergency at the remote location; and contact a third party in response to the received notification.

114. The system of claim 94 wherein the processor is further configured to determine a pay rate; and credit value to the user in accordance with the pay rate.

115. The system of claim 114 wherein value is credited to a financial account.

5 116. The system of claim 94 wherein the processor is further configured to receive from the user device notification of an emergency at the remote location, and pay a bonus for each legitimate emergency detected by the user.

117. A system for managing remote monitoring tasks comprising:
a memory device;
10 a processor in communication with the memory device;
and the processor configured to:
assign to a user of a data network a remote monitoring task including a
remote location to monitor and a shift for monitoring the remote location; and
provide the user with information relating to the remote monitoring task,
15 the information to be transmitted by the user to the central server at approximately a
start of the shift.

118. The system of claim 117 wherein the information comprises at least one of an account identifier, a task identifier and the shift.

119. The system of claim 117 wherein the processor is further configured to determine whether predetermined criteria have been satisfied prior to providing the user
5 with the information to be transmitted to the central server.

120. The system of claim 119 wherein the predetermined criteria includes a minimum user rating required to monitor the remote location.

121. The system of claim 117 wherein the processor is further configured to prevent the user from monitoring a remote location that is within a predetermined
10 distance from the user's address.

122. The system of claim 117 wherein the processor is further configured to prevent the user from monitoring a remote location more than a predetermined number of times.

123. The system of claim 117 wherein the processor is further configured to prevent the user from monitoring a remote location during a predetermined period of time.

124. The system of claim 117 wherein the processor is further configured to
5 assign the remote monitoring task based on user-specified preferences concerning the shift.

125. The system of claim 117 wherein the processor is further configured to determine an emergency procedure to be followed by the user in the event the user detects an emergency at the remote location; and transmit the emergency procedure to
10 the user.

126. The system of claim 117 wherein the processor is further configured to remind the user of the remote monitoring task prior to a start of the shift.

127. A system for managing remote monitoring tasks comprising:
a memory device;
15 a processor in communication with the memory device;

and the processor configured to:

determine a remote location to be monitored;

enable communication between a sensor at the remote location and a plurality of users of a data network;

5 determine an amount of time each user of the plurality of users has monitored the remote location; and

credit value to at least one of the plurality of users for monitoring the remote location.

128. The system of claim 127 wherein the processor is further configured to
10 determine a shift for monitoring the remote location; and wherein the processor enables communication between the sensor and at least one of the plurality of users at approximately a start of the shift.

129. The system of claim 127 wherein the processor is further configured to recruit users to monitor the remote location.

15 130. The system of claim 127 wherein the processor is further configured to inform a user of the plurality of users that he is the only user monitoring the remote location.

131. The system of claim 127 wherein the processor is further configured to receive notification of an emergency at the remote location from a first user of the plurality of users; and contact a third party if at least a predetermined amount of the plurality of users reports the emergency.

5 132. The system of claim 131 wherein the processor is further configured to inform a second user of the plurality of users of the notification of the emergency at the remote location.

133. A system for managing remote monitoring tasks comprising:
a memory device;
10 a processor in communication with the memory device;
and the processor configured to:
receive a request from a user of a user device to monitor a remote
location in exchange for value;
determine a remote location to be monitored;
15 enable communication between a sensor at the remote location and the
user device for remote monitoring purposes; and
measure user attentiveness while the user device is in communication
with the sensor.

134. The system of claim 133 wherein the user device is a personal computer.

135. The system of claim 133 wherein the processor is further configured to determine a shift for monitoring the remote location; and wherein the processor enables communication between the sensor and the user device at approximately a start of the
5 shift.

136. The system of claim 133 wherein the processor is further configured to determine whether predetermined criteria have been satisfied prior to enabling communication between the sensor and the user device.

137. The system of claim 136 wherein the predetermined criteria includes a
10 minimum user rating required to monitor the remote location.

138. The system of claim 137 wherein the minimum user rating is based on measured user attentiveness.

139. The system of claim 133 wherein the processor is further configured to credit value to a financial account of the user for monitoring the remote location.

140. The system of claim 133 wherein the processor is configured to measures user attentiveness by transmitting a test communication to the user at the user
5 device; and determining whether a response to the test communication has been received within a predetermined period of time.

141. The system of claim 140 wherein the test communication is a predetermined video of an emergency.

142. The system of claim 140 wherein the test communication is a query.

10 143. The system of claim 140 wherein the processor is further configured to measure user attentiveness by determining whether the response is an expected response.

144. The system of claim 133 wherein the processor is further configured to receive a biometric measurement of the user; and measure user attentiveness based on the biometric measurement.

145. The system of claim 144 wherein the biometric measurement is a retinal
5 scan.

146. The system of claim 133 wherein the processor is configured to measure user attentiveness by enabling a second user to monitor the user monitoring the remote location.

147. The system of claim 133 wherein the processor is further configured to
10 cause an audible alarm to be transmitted to the user at the user device if the user is not attentive.

148. The system of claim 133 wherein the processor is further configured to penalize the user if the user is not attentive.

149. The system of claim 148 wherein penalizing the user includes paying the user only if the user is attentive.

150. The system of claim 148 wherein penalizing the user includes crediting the user's account an amount that is less than if the user had been attentive.

5 151. The system of claim 148 wherein penalizing the user includes charging the user's account.

152. The system of claim 148 wherein penalizing the user includes preventing future monitoring by the user.

10 153. The system of claim 133 wherein the processor is further configured to replace the user with an alternate user to monitor the remote location if the user is not attentive.

154. A system for alerting a user of a computer of an emergency at a remotely monitored location comprising:

a memory device;
a processor in communication with the memory device;
and the processor configured to:
maintain the computer in communication with a remote sensor;
5 transmit a signal indicative of a predetermined event detected by the
remote sensor to the computer; and
transmit video data from a camera at the remotely monitored location to
the computer,
wherein the signal causes the computer to preempt a program unrelated
10 to remote monitoring to display the video data.

155. The system of claim 154 wherein the processor maintains the computer
in communication with a remote sensor via a browser.

156. The system of claim 154 wherein the program is a word processor.

157. The system of claim 154 wherein the predetermined event includes at
15 least one of a predetermined level of motion, sound, pressure and light intensity.

158. A system for alerting an individual of an emergency at a remote location, comprising:

a memory device;

a processor in communication with the memory device;

5 and the processor configured to:

transmit a signal indicative of a predetermined event detected by a sensor at the remote location to a television set; and

transmit video data from a camera at the remote location to the television set,

10 wherein the signal causes the television set to preempt a program to display the video data.

159. The system of claim 158 wherein the predetermined event includes at least one of a predetermined level of motion, sound, pressure and light intensity.

160. The system of claim 158 wherein the processor is further configured to
15 transmit a signal to the television set which causes an alarm to issue to inform the user of the predetermined event detected at the sensor.

161. A system for alerting a user of a computer of an emergency at a remotely monitored location comprising:

a memory device;

a processor in communication with the memory device;

5 and the processor configured to:

maintain communication with a remote sensor via a central server;

run a program on the computer, wherein the program is unrelated to remote monitoring; and

10 pre-empt the program if a predetermined event is detected by the remote sensor.

162. The system of claim 161 wherein the processor maintains communication with the remote sensor via a browser.

163. The system of claim 161 wherein the predetermined event includes a predetermined level of motion or sound.

15 164. The system of claim 161 wherein the processor is further configured to receive video data from a camera at the remotely monitored location, and wherein preempting the program includes displaying the video data.

165. A system for a television set to alert an individual of an emergency at a remote location, comprising:

a memory device;

a processor in communication with the memory device;

5 and the processor configured to:

receive a signal indicative of a predetermined event detected by a sensor at the remote location; and

in response to the signal, preempt a program to display video data received from a camera at the remote location.

10 166. The system of claim 165 wherein the predetermined event includes at least one of a predetermined level of motion, sound, pressure and light intensity.

167. The system of claim 165 wherein the processor is further configured to cause an alarm to issue to inform the user of the predetermined event detected at the remotely monitored location.

15 168. A method for a central server to manage remote monitoring tasks, comprising:

- receiving a request from a user of a user device to monitor a remote location;
- determining a remote location to be monitored;
- determining whether predetermined criteria have been satisfied prior to
- 5 enabling communication between a sensor at the remote location and the user device;
- enabling communication between the sensor and the user device;
- measuring user attentiveness while the user device is in communication with the sensor for remote monitoring purposes; and
- crediting value to the user in accordance with an amount of time the user
- 10 device has been in communication with the sensor for remote monitoring purposes.

169. The method of claim 168 wherein the user device is a personal computer.

170. The method of claim 168 wherein the user device is a television set.

171. The method of claim 168 wherein the request is received via at least one

15 of the Internet, a wireless television network, and a cable television network.

172. The method of claim 169 further comprising the steps of:

transmitting a signal indicative of a predetermined event detected by the
sensor to the computer; and
transmitting video data from the sensor to the computer,
wherein the signal causes the computer to preempt a program unrelated
5 to remote monitoring to display the video data.

173. The method of claim 170 further comprising the steps of:
transmitting a signal indicative of a predetermined event detected by the
sensor to the television set; and
transmitting video data from the sensor to the television set,
10 wherein the signal causes the television set to preempt a television
program to display the video data.

174. A method for a central server to manage remote monitoring tasks,
comprising:
a memory device;
15 a processor in communication with the memory device;
and the processor configured to:
receive a request from a user of a user device to monitor a remote
location;
determine a remote location to be monitored;

determine whether predetermined criteria have been satisfied prior to enabling communication between a sensor at the remote location and the user device;
enable communication between the sensor and the user device;
measure user attentiveness while the user device is in communication
5 with the sensor for remote monitoring purposes; and
credit value to the user in accordance with an amount of time the user device has been in communication with the sensor for remote monitoring purposes.

175. The system of claim 174 wherein the user device is a personal computer.

176. The system of claim 174 wherein the user device is a television set.

10 177. The system of claim 174 wherein the request is received via at least one of the Internet, a wireless television network, and a cable television network.

178. The system of claim 175 wherein the processor is further configured to:
transmit a signal indicative of a predetermined event detected by the
sensor to the computer; and
15 transmit video data from the sensor to the computer,

wherein the signal causes the computer to preempt a program unrelated to remote monitoring to display the video data.

179. The system of claim 176 wherein the processor is further configured to:
- transmit a signal indicative of a predetermined event detected by the
- 5 sensor to the television set; and
- transmit video data from the sensor to the television set,
- wherein the signal causes the television set to preempt a television program to display the video data.

1 / 10

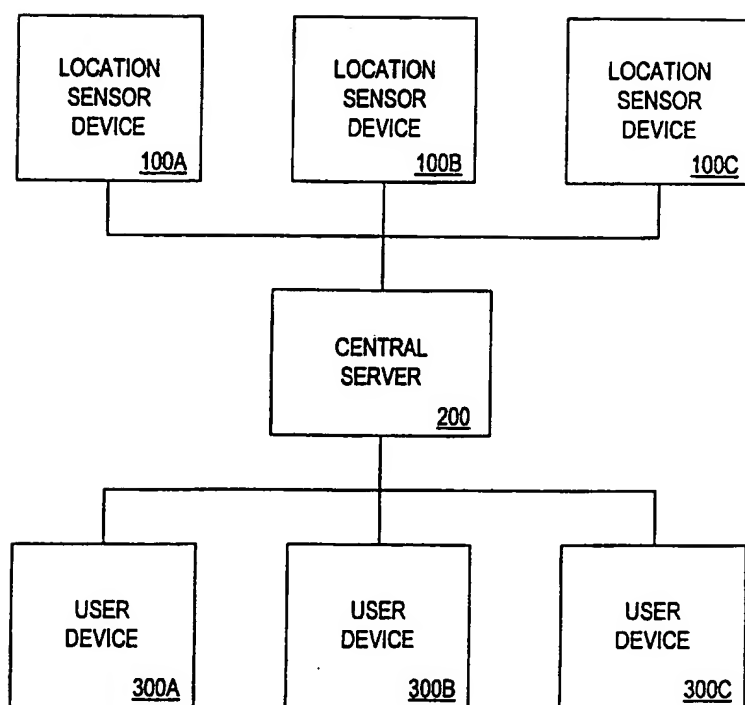


FIG. 1

2 / 10

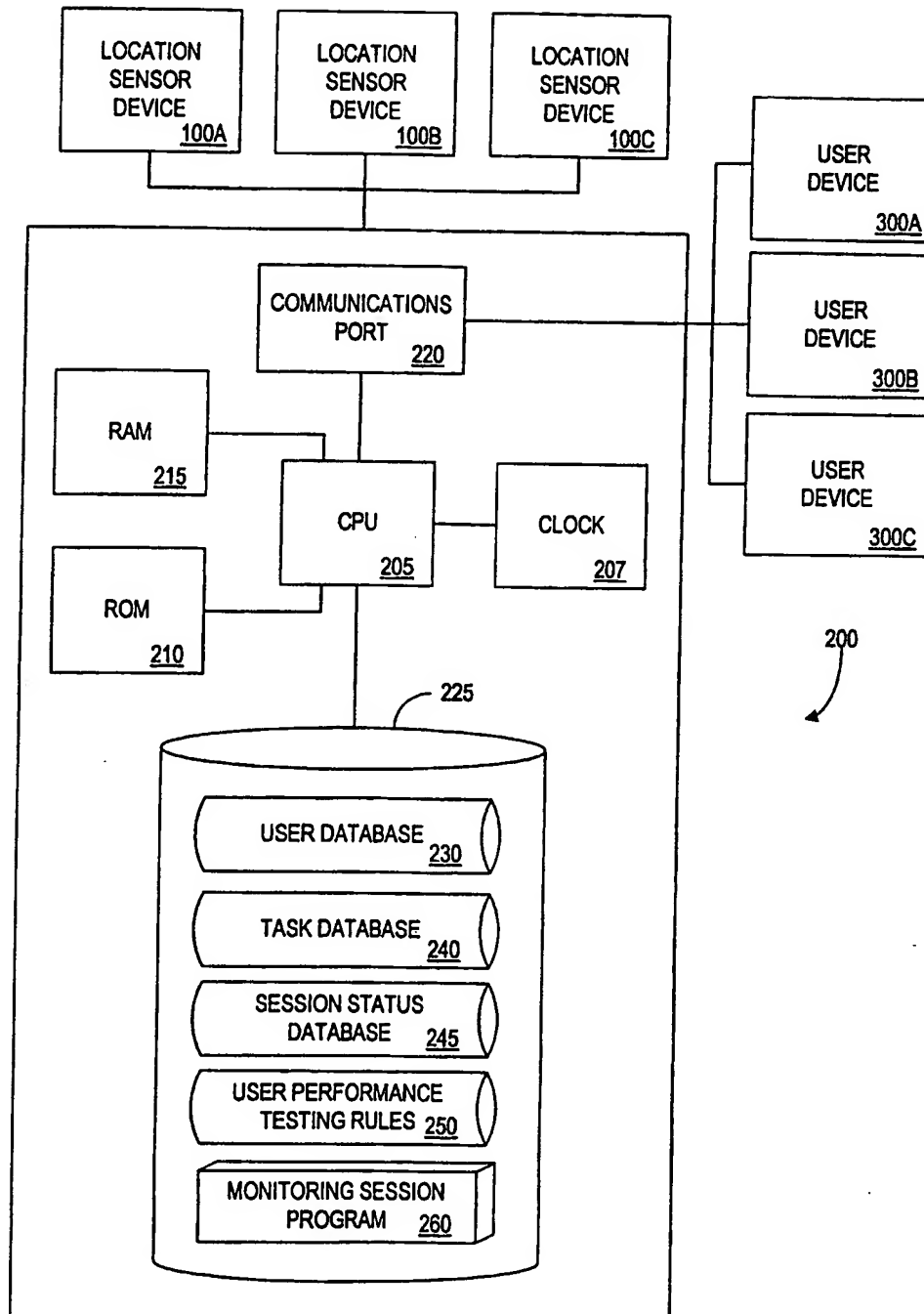


FIG. 2

3 / 10

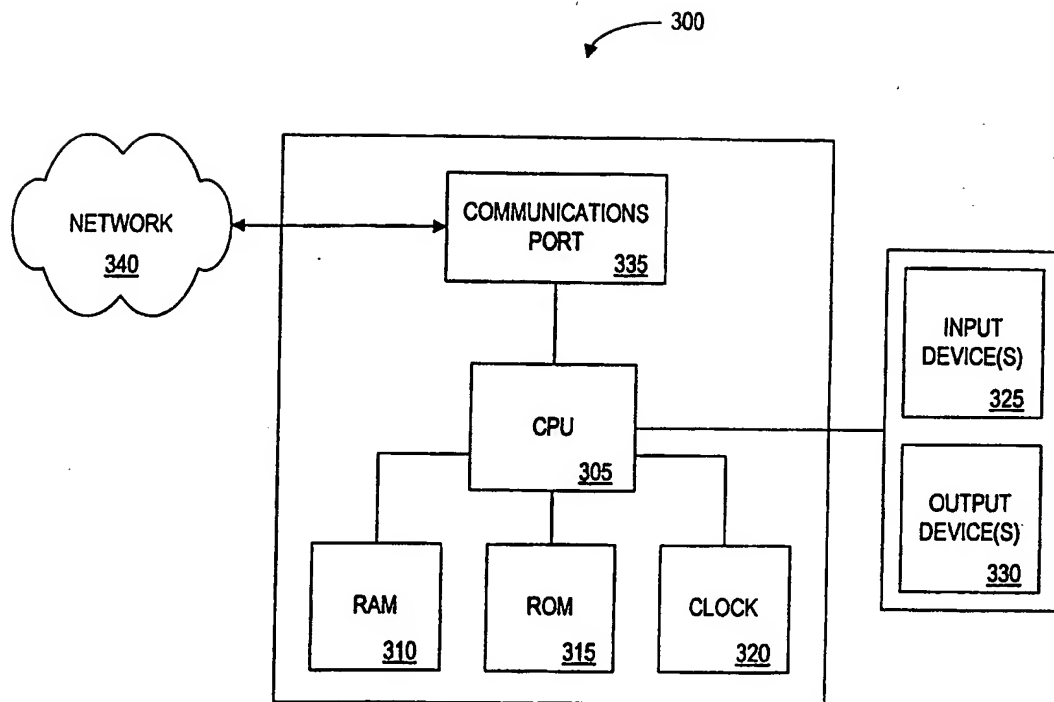



FIG. 3

4 / 10

230



USER IDENTIFIER <u>410</u>	USER RATING <u>420</u>	ACCOUNT BALANCE <u>430</u>
BSMITH	0	-\$39.95
SJOHNSON	8	+\$498.60
RMARTIN	7	+\$192.55

FIG. 4

5/10

240

TASK IDENTIFIER 505	SENSOR LOCATIONS 510	SENSOR ADDRESS 515	LOCATION OWNER 520	PAY RATE 525	RULE(S) 530	SHIFT(S) 535	EMERGENCY PROCEDURES 540	FULLY ASSIGNED? 545
12345	FLEET BANK, HAMDEN, CT BRANCH	WWW.FLEET BANK.COM/ BRANCH3/CAM1	FLEET CORPORATION, HARTFORD, CT	\$5.00/ HOUR	3 USERS	1/1/98 12:00 AM - 3:00 AM	CLICK EMERGENCY BUTTON ON ISP FRAME	YES
12346	17 MAIN ST. ANYTOWN, CT 06999	(203) 555-1212	BOB OSBORNE	\$4.50/ HOUR	UP TO 2 USERS	1/1/98 3:01 AM - 6:00 AM	CALL ANYTOWN POLICE DEPT. AT (203) 981-3987	NO

FIG. 5

245

TASK IDENTIFIER	SHIFT	USER IDENTIFIER(S)	STATUS	PERFORMANCE RESULTS
12345	1/1/98 12:00 AM - 3:00 AM	RMARTIN SGAVIN DBYRD	COMPLETED	- ALL TEST COMMUNICATIONS POSITIVE - NO EMERGENCIES
12345	1/1/98 3:01 AM - 6:00 AM	SJOHNSON	IN PROGRESS	- FAILURE TO RESPOND TO TWO TEST COMMUNICATIONS
12346	1/2/98 9:00 AM - 5:00 PM	RMARTIN	N/A	N/A

FIG. 6

7/10

7 / 10

250

TASK IDENTIFIER 705	TEST COMMUNICATION 710	TEST COMMUNICATION INTERVALS 715	REQUIRED RESPONSE TIME 720	REQUIRED RESPONSE 725
12345	C:/TESTCOM/12345/CLIP1 ("STAGED EMERGENCY")	RANDOM	10 SECONDS	CLICK 911 BUTTON
12346	C:/TESTCOM/12346/ QUESTIONSET1 ("QUESTIONS")	EVERY 5 MINUTES	15 SECONDS	CORRECT ANSWER CHOICE

FIG. 7

8 / 10

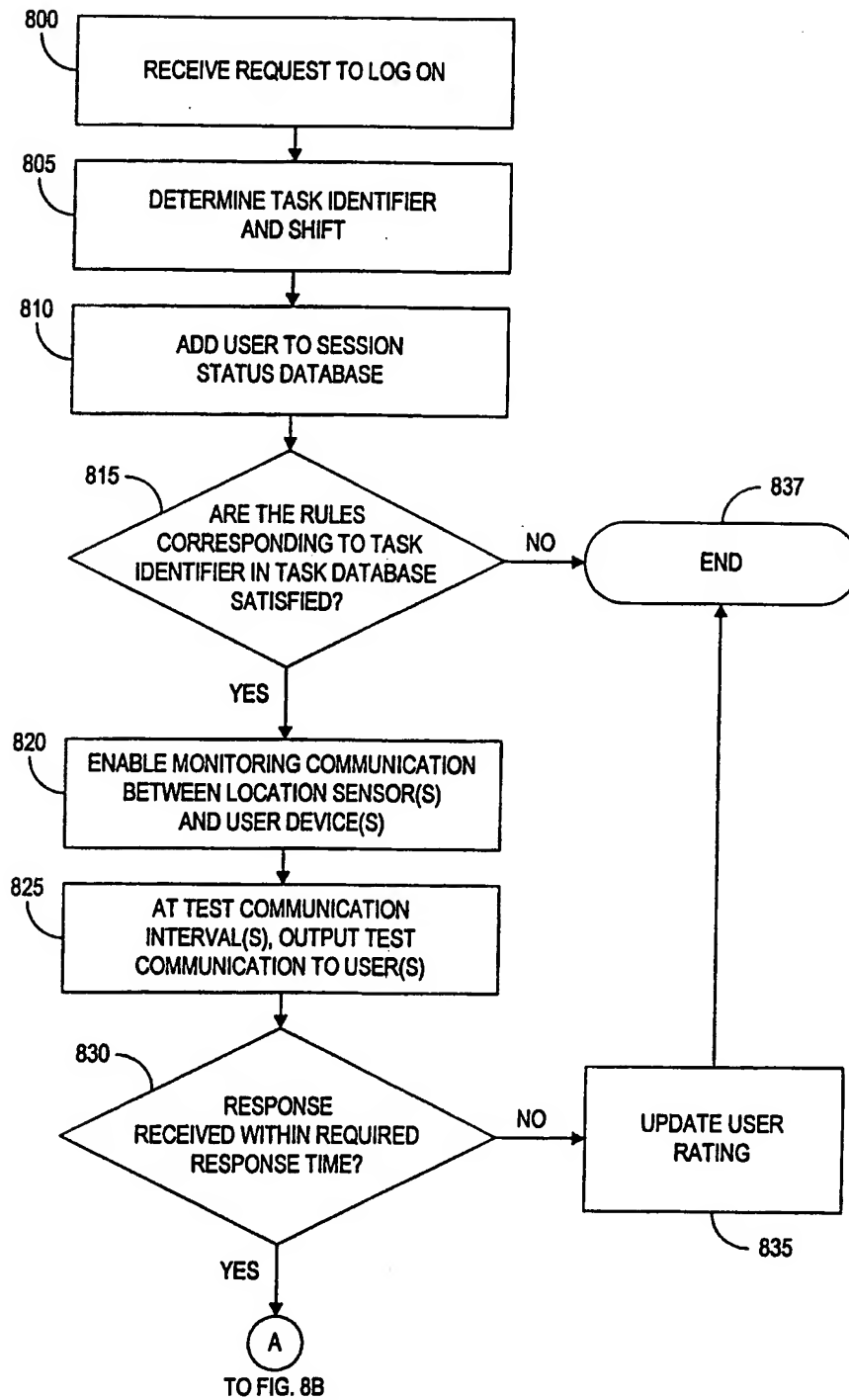


FIG. 8A

9 / 10

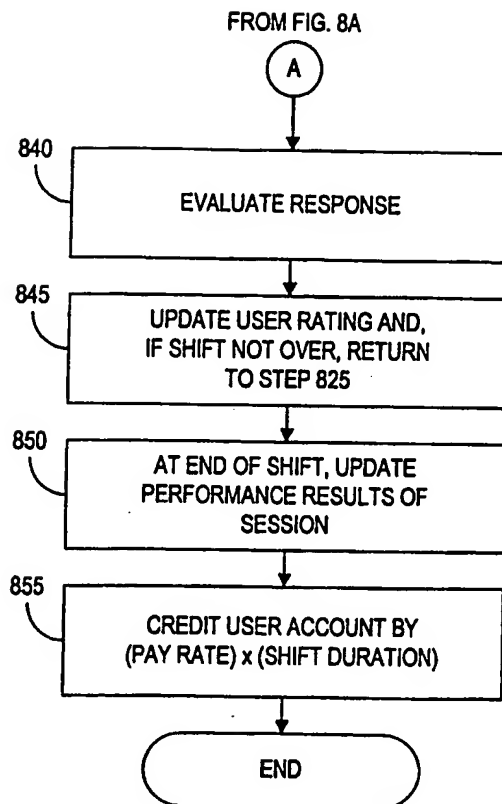


FIG. 8B

10 / 10

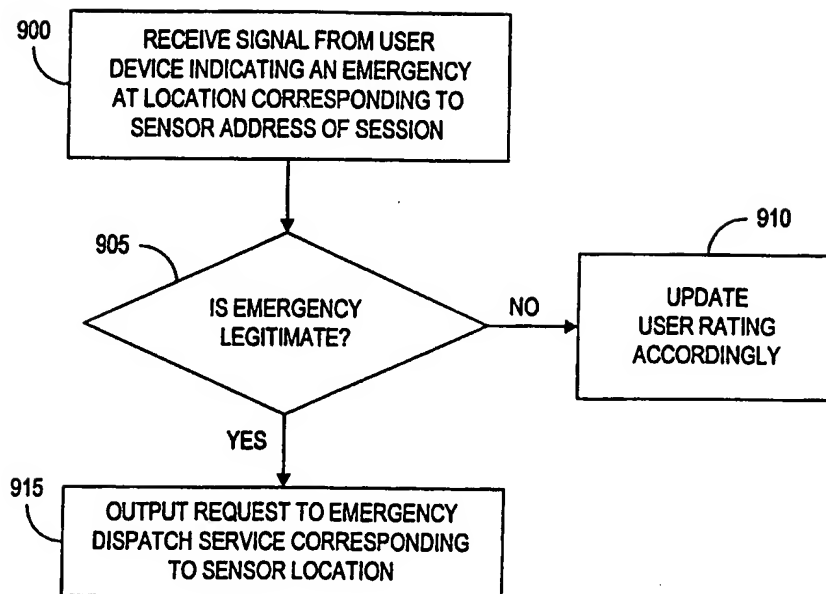


FIG. 9

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
6 July 2000 (06.07.2000)

PCT

(10) International Publication Number
WO 00/39724 A3

(51) International Patent Classification⁷: **G06F 17/60**

(21) International Application Number: **PCT/US99/29659**

(22) International Filing Date:
14 December 1999 (14.12.1999)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/221,250 28 December 1998 (28.12.1998) US

(71) Applicant (for all designated States except US):
WALKER DIGITAL, LLC [US/US]; One High Ridge
Park, Stamford, CT 06905 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WALKER, Jay, S.**
[US/US]; 124 Spectacle Lane, Ridgefield, CT 06877 (US).

TEDESCO, Daniel, E. [US/US]; Apartment 6, 192 Park
Street, New Canaan, CT 06480 (US). **ALDERUCCI, Dean**
[US/US]; 19-8 Prospect Ridge Road, Ridgefield, CT 06877
(US). **MIK, Magdalena** [US/US]; 10 South New Street,
Greenwich, CT 06830 (US).

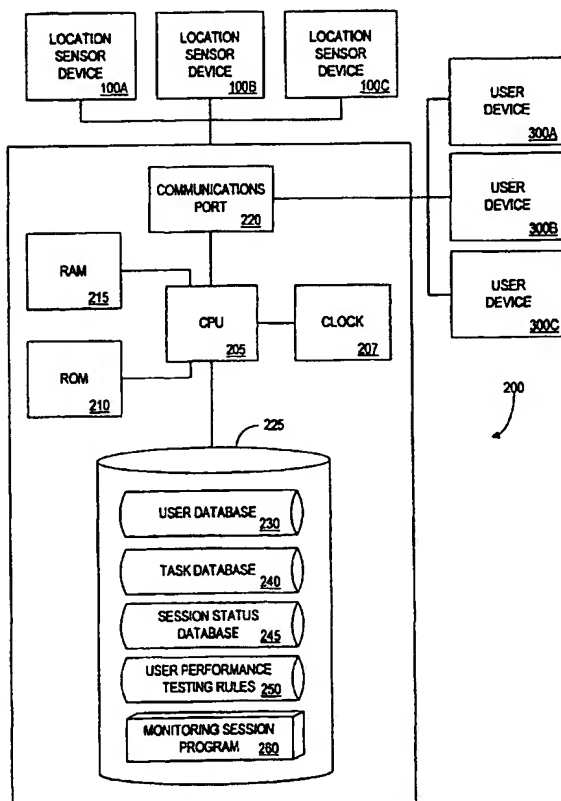
(74) Agents: **MASCHOFF, Kurt, M.** et al.; Walker Digital
Corporation, Intellectual Property Dept., One High Ridge
Park, Stamford, CT 06905 (US).

(81) Designated States (national): AE, AL, AM, AT, AU, AZ,
BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE,
ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,
KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD,
MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD,
SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ,
VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent

[Continued on next page]

(54) Title: INTERNET SURVEILLANCE SYSTEM AND METHOD



(57) Abstract: A system and method are disclosed for a central server to manage remote monitoring tasks performed by users of a data network. An exemplary method comprises: receiving a request from a user of a user device to monitor a remote location; determining a remote location to be monitored; enabling communication between a sensor at the remote location and the user device; and crediting value to the user in accordance with an amount of time the user device has been in communication with the remote sensor for remote monitoring purposes. An alternate exemplary method includes measuring user attentiveness while the user device is in communication with the remote sensor. Thus, the disclosed system and method provide a way for users of a data network such as the Internet to log on at any time and perform remote monitoring tasks for value. Idle time can now be turned into value using the disclosed system and method. Moreover, little or no skill is required of the user to earn value using the disclosed system and method; the user need only be attentive while performing a remote monitoring task. Location owners also benefit from the convenience by which they can now have their properties monitored and by the ability of the disclosed system and method to ensure the attentiveness of the user performing the remote monitoring task.

WO 00/39724 A3



(AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:
8 November 2001

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/29659

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F17/60

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G08B G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data, INSPEC, IBM-TDB

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 22074 A (CYBERGOLD INC ;GOLDHABER A NATHANIEL (US); FITTS GARY (US)) 19 June 1997 (1997-06-19)	1-4, 8-14,16, 17, 20-22, 25,41, 94-97, 99-104, 106,107, 110-112, 114,115, 127
Y		5-7,15, 23,24, 26, 28-36, 40,42, 45,46, 98,105, 113,116,
	-/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

18 December 2000

Date of mailing of the international search report

17. 04. 2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Bowler, A

INTERNATIONAL SEARCH REPORT

Internal Application No

PCT/US 99/29659

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>page 19, line 1 -page 19, line 29 page 28, line 4 -page 28, line 13 figures 3,6,7</p> <p>---</p>	<p>118-124, 126,128, 131,132 43,44, 129,130</p>
Y	<p>US 5 412 708 A (KATZ RONALD A) 2 May 1995 (1995-05-02)</p> <p>---</p>	<p>5-7,15, 23,24, 26,98, 105,113, 116</p>
X		<p>27, 37-39, 117,125</p>
Y		<p>28-36, 40,42, 45,46, 118-124, 126,128, 131,132</p>
A	<p>column 3, line 5-68; figures 1-4</p> <p>---</p> <p>US 4 982 346 A (GIROUARD KENNETH P ET AL) 1 January 1991 (1991-01-01) abstract; figure 1</p> <p>---</p>	<p>18,19, 108,109</p>
P,A	<p>PATENT ABSTRACTS OF JAPAN vol. 1999, no. 05, 31 May 1999 (1999-05-31) & JP 11 053669 A (NIPPON TELEGR &AMP;TELEPH CORP &LT;NTT&GT;), 26 February 1999 (1999-02-26) abstract</p> <p>-----</p>	<p>1-46, 94-132</p>

INTERNATIONAL SEARCH REPORT

Inte. onal application No.
PCT/US 99/29659

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1, 27, 41, 94, 117, 127

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1,27,41,94,117,
127 and the claims depending therefrom,
respectively:

A method and system for managing a remote monitoring task.

2. Claims: 47,133, 168,
174 and the claims depending therefrom,
respectively:

A method for managing a remote monitoring task, and for measuring user attentiveness.

3. Claims: 68,72,87,154,158,161 and 91,
165 and the claims depending therefrom,
respectively:

A method and system for alerting a user of a computer of an emergency at a remotely monitored location, wherein a program is preempted, and a method and a system for a television set to alert an individual to an emergency.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 99/29659

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9722074 A	19-06-1997	US 5794210 A	11-08-1998
		AU 1415397 A	03-07-1997
		CA 2240314 A	19-06-1997
		EP 0934570 A	11-08-1999
		JP 2000501868 T	15-02-2000
		US 5855008 A	29-12-1998

US 5412708 A	02-05-1995	CA 2157895 A	15-09-1994
		EP 0688489 A	27-12-1995
		JP 8510873 T	12-11-1996
		WO 9421084 A	15-09-1994
		US 5495284 A	27-02-1996

US 4982346 A	01-01-1991	NONE	

JP 11053669 A	26-02-1999	NONE	
